

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.: 10/008,271	§	Examiner: Phan, Thai Q.
Filed: November 9, 2001	§	Group/Art Unit: 2128
Inventor(s):	§	Atty. Dkt. No: 5181-96500
James P. Freyensee, Carl	§	
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	§	
Title: Hot Plug and Hot Pull	§	
System Simulation	§	
	§	

PRE-APPEAL BRIEF REQUEST FOR REVIEW

ATTN: Mailstop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Applicants request review of the final rejection in the above-identified application. No amendments are being filed with this request. This request is being filed with a notice of appeal. Independent claims 1, 11, 20, 27, and 34 are rejected under 35 U.S.C. § 102(e) as being anticipated by Duda et al, U.S. Patent No. 6,628,287 ("Duda"). Applicants set forth the clear errors in the rejections below. Please note that for brevity, only the primary arguments directed mainly to the independent claims are presented, and that additional arguments, e.g., directed to the subject matter of the dependent claims, will be presented if and when the case proceeds to Appeal.

Applicants respectfully submit that claims 1-39 recite combinations of features not taught or suggested in the cited art. For example, claim 1 recites a combination of features including: "a first node configured to participate in a simulation of a system under test, wherein the first node is configured to simulate a first component of the system under test...wherein, responsive to the hot pull command, the first node ceases participation in the simulation to simulate a removal of the first component from the system under test." The Office Action asserts that the above highlighted features are

anticipated by Duda at col. 4, lines 34-55; col. 6, lines 7-12; col. 6, line 31-col. 7, line 32; col. 9, line 19 to col. 10, line 24; and col. 12, lines 22-64. Applicants respectfully disagree.

Duda teaches a distributed simulation system for simulating real world objects, some of which can be controlled by a user (Duda, col. 4, lines 56-58). The objects can be divided into categories: "1) objects that are influenced by user commands, which are called 'actors', and 2) objects that are not influenced by commands, which are called 'obstacles'. An actor may be, for example, an avatar. Actors are further categorized as either: 1) 'pilot actors', which are actors that are influenced by local user commands, or 2) 'shadow actors', which are actors that are influenced by user commands from a remote client." (Duda, col. 5, lines 59-66). Clients may calculate pilot actor's state ahead of the global time and may receive state regarding shadow actors behind global time. Various mechanisms for correcting errors introduced by these time shifts, network errors that result in lost packets, etc. are described. However, nothing in Duda has anything to do with a hot pull command, nor is there any teaching of ceasing participation in the simulation to simulate a removal of a component from the system. For example, there is no teaching or suggestion of receiving a hot pull command to remove an actor or obstacle from a simulation, nor of ceasing participation in the simulation to simulate a removal of an actor or obstacle. In general, the teachings of Duda describe how objects interact with other objects within the simulation. **In no case does an object get "pulled" from the simulation, and in no case does a node cease participating in the simulation.**

At col. 4, lines 34-55, Duda teaches the network environment on which the simulation is executed. However, there is no teaching or suggestion of a hot pull command or responding to a hot pull command. At col. 6, lines 7-12, Duda teaches: "Global virtual time advances in synchronization with wall-clock time, and is the same at any given instant on all machines. Global virtual time is authoritatively maintained by a server, as described below, and may be propagated to all clients participating in the simulation using any conventional clock synchronization protocol, such as Network Time Protocol (NTP)." These teachings describe how time is maintained in Duda's simulation

system, which again has nothing to do with a hot pull command or simulating the removal of a component from the system under test. Col. 6, line 31-col. 7, line 32 describes how user commands can affect the state of objects (e.g. the user's avatar, or objects that the user's avatar may interact with). The commands are applied locally on the client machine (which is running ahead of the global time) and transmitted to the server, which transmits the commands to other clients that may have copies of the objects. All receivers calculate the same state based on the command. Again, there is no teaching of a hot pull command, nor of ceasing participation in the simulation by a node to simulate removal of the component that the node is simulating from the system. Col. 9, line 19 to col. 10, line 24 of Duda describes how obstacles are handled, how actors interact with obstacles, etc. Generally, the obstacles are characterized by a state function and the state of the obstacle is calculate locally at each client in a fashion similar to actors (Duda, col. 9, lines 19-23). Duda also describes how objects that may be influenced by multiple actors at the same time is handled (e.g. two actors interacting with a soccer ball). However, there is no teaching or suggestion of a hot pull command, nor of ceasing participation in the simulation. Lastly, col. 12, lines 22-64 describe how tradeoffs of functionality and consistency can be made by characterizing objects as "heavy", "actor", or "light", and how objects behave in collisions with other objects based on their respective characterizations. **Again, there is no hot pull command nor of ceasing participation in the simulation.**

The Final Office Action includes the following assertion: "Duda anticipates the simulation process is able to simulate add-on object or removal of the object or component from the system under simulation in a secure and distributed manner by disregarding or decreasing the actor operation so that the actor can handle the simulation of the removal or add-on component in the system under simulation (col. 8, lines 2-5; col. 12, lines 17-21; lines 28-45; col. 12, line 65 to col. 13, line 15)" (Office Action, page 3, second paragraph). Applicants have no idea what the above assertion is intended to mean, but the cited sections of Duda generally have to do with how interactions between actors occur and how actors can control heavy objects while still providing a satisfying simulation for the user. In some cases, a previously calculated state of an object is

discarded so that it can be corrected based on a later-received command (e.g. col. 8, lines 2-5). In other cases, interactions between actors have no effect, and actors are not permitted to control heavy objects, or the control is provided by changing the time lags that are otherwise normally provided in the system. Again, in no case is any component pulled from the system, and no node ceases participation in the simulation.

Applicants can find no teaching or suggestion anywhere in Duda for the above highlighted features of claim 1. For at least all of the above stated reasons, Applicants respectfully submit that Duda does not anticipate claim 1. Claim 11 recites a combination of features including: "the first node configured to participate in a simulation and to simulate a first component of a system under test in the simulation; and ceasing participation of the first node in the simulation responsive to the hot pull command to simulate a removal of the first component from the system under test". Claim 20 recites a combination of features including: "first instructions which, when executed, cease participation in a simulation by a first node in a distributed simulation system responsive to receiving a hot pull command, the first node simulating a first component of a system under test, and the first node ceasing participation in the simulation simulates removal of the first component from the system under test". Claim 27 recites a combination of features including: "a first node configured to participate in a simulation of a system under test, the first node configured to simulate a first component of the system under test ...wherein the first node does not participate in the simulation prior to the hot plug command, and wherein the first node begins participation in the simulation responsive to the hot plug command to simulate insertion of the first component in the system under test." Claim 34 recites a combination of features including: "the first node configured to participate in a simulation and to simulate a first component of a system under test in the simulation...the first node beginning participation in the simulation responsive to the hot plug command to simulate insertion of the first component into the system under test wherein the first node does not participate in the simulation prior to the hot plug command." The same teachings of Duda highlighted above with regard claim 1 are alleged to anticipate the above highlighted claims. Applicants respectfully submit that Duda does not anticipate the

above features, either.

For at least all of the above stated reasons, Applicants submit that claims 1, 11, 20, 27, and 34 are patentable over the cited art. Claims 2-10 (being dependent from claim 1), claims 12-19 (being dependent from claim 11), claims 21-26 (being dependent from claim 20), claims 28-33 (being dependent from claim 27), and claims 35-39 (being dependent from claim 34) are similarly patentable over the cited art for at least the above stated reasons. Each of claims 2-10, 12-19, 21-26, 28-33, and 35-39 recites additional combinations of features not taught or suggested in the cited art. Given the patentability of claims 1, 11, 20, 27, and 34, Applicants have not highlighted such additional combinations of features in this request. **However, Applicants reserve the right to highlight such additional combinations on Appeal.**

Applicants submit the application is in condition for allowance, and an early notice to that effect is requested. If any fees are due, the Commissioner is authorized to charge said fees to Meyertons, Hood, Kivlin, Kowert, & Goetzel, P.C. Deposit Account No. 501505/5181-96500/LJM.

Respectfully submitted,

/Lawrence J. Merkel/

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